

## ACCEPTANCE PROCEDURES

1.0 Purpose - The purpose of the inspection and acceptance plan is to provide mechanical and operational verification of the installed ASOS by using the system Inspection Procedures and the Acceptance Demonstration Procedures. The ASOS inspection and acceptance demonstration summary documents are to be filled out by the NWS Technical Monitor as the various inspection and demonstration tasks are completed.

1.1 Duration of Inspection and Acceptance Procedures - Under normal conditions, the time required to perform these procedures should not exceed 4 hours for Class I sites and 6 hours for Class II sites.

1.2 Approach - The site inspection and acceptance procedures are initiated at the ACU and/or OID location. Acceptance of the system includes verification of system configuration, proper installation to include pressure sensors and venting, operation, stability, and accuracy of data. For inspection purposes, the NWS Technical Monitor will initiate the inspection at the indoor location (ACU/OID) and record the results on the inspection document as each specific area is inspected. The inspection procedures may be used in parallel with the demonstration procedures.

The NWS Technical Monitor will move to the outside location(s) to conduct a physical inspection and witness the conduct of acceptance procedures. The NWS Technical Monitor will witness the stimulation of the sensors and, on return to the ACU/OID, verify the data are received at the ACU and reflect the anticipated results.

1.3 System Inspection - The following procedure is provided to aid the NWS Technical Monitor in verifying acceptable system installation. A summary page, entitled ASOS Inspection Summary Document, listing all sensors and peripherals is attached and must be signed by the NWS Technical Monitor once the system has been inspected. The original and one copy will be given to the NWS Technical Monitor while the contractor will retain the other two copies. Four part carbonless forms are provided to the NWS Technical Monitor to record the results of the inspection and acceptance demonstration.

Similarly, the summary page, entitled ASOS Demonstration Summary Document, lists the results of all equipment demonstrations and tests. The demonstration summary document must also be filled out by the NWS Technical Monitor and distributed as stated above. An example of the summary document is provided as well as a copy of the actual inspection and demonstration summary documents. The NWS Technical Monitor conducting the inspection and witnessing the demonstration will recommend acceptance or rejection depending upon the results of the inspection and demonstration. The summary document will then be sent to the NWS Regional COTR for signature and forwarded to the ASOS Program Office. The inspection document and the demonstration document will be forwarded as a single package.

**1.4 Required Documentation** - The following documentation is required to complete the site inspection and demonstration.

Current Site Survey

GTA Radio Antenna Site Survey (if available)

Site Tables (Appendix D of Contract)

Baseline Configuration Listing

Site specific data (i.e., Special and Local Criteria for ceiling and visibility, AFOS phone data, and site opening and closing times)

Installation, Checkout, and Calibration Checklist

Initialization Checklist

Stability Test Checklist

All documentation will be carried by the installation team and made available to the NWS Technical Monitor. When filling out the summary sheets, multiple sensors, DCPs, and peripherals may be noted by adding remarks similar to.... DCP #2 failed UPS test, CHI #1 has dented door, and/or VDU #3 failed to operate.

**1.5 Required Tools and Test Equipment** - The following tools and test equipment are required to conduct and complete the demonstration.

IBM Compatible PC / with Modem, Cables, and Connectors	Procomm software
Pressure Standard	Measuring Tape
Common Hand Tools	Multimeter
Torpedo level	Lensatic Compass
Safety Equipment	Airband radio
Graduated Cylinder	Mobile Telephone
Calibration Card STI 200	Water
	Visibility Cal Kit

Lens Covers

Scatter Plate

All required tools and test equipment are carried by the installation crew and are available for use in the demonstration.



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5 5. Obtain access to Ground to Air antenna.

5 a. Is antenna mounting bracket secure?

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5 SYSTEM INSPECTION PROCEDURES

5 INSPECTION ITEM

5 8. At the Temperature/Dew Point Sensor, open the door of the  
5 electronics box.

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- a. Verify correct labels for H083 (electronics box and sensor)
  - b. Inspect ground wire connections.
  - c. Verify mounting hardware is secure and complete.
  - d. Verify aspirator fan is running.
  - e. Check that all wires are secure in the electrical box.
  - f. Inspect power cabling for proper mechanical connection.
  - g. Inspect fiber optic cable for tightness.
  - h. Inspect for physical damage.
  - i. Check for correct height above ground and sensor is over natural terrain - not the gravel path.
  - j. Verify that aspirator is facing away from the DCP along the array centerline.

5 9. At the LEDWI (Present Weather Sensor), open the electronics  
5 enclosure and Faraday Box cover.

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- a. Inspect ground wire connections.
  - b. Verify mounting hardware is secure and complete and includes the hinge plate for tilt over capability.
  - c. Verify sensor receiver opening faces true north ( $\pm 10^\circ$ ).
  - d. Inspect power cables for proper mechanical connection.
  - e. Inspect fiber optic cable for tightness.
  - f. Inspect for physical damage.
  - g. Check for correct height above ground.

## 5 10. At the Ceilometer

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- a. Inspect ground wire connections.
  - b. Verify mounting hardware is secure and complete.
  - c. Verify height above ground.
  - d. Verify proper orientation of sensor. Receiver should face true north  $\pm 10^\circ$ .
  - e. Inspect power cables for proper mechanical connection.
  - f. Inspect fiber optic cables for tightness.
  - g. Inspect for physical damage.

## 5 11. At the Freezing Rain Sensor

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- a. Step by step procedures to be determined at award of contract.

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**ASOS INSPECTION DOCUMENT - SAMPLE**

## ASOS INSPECTION DOCUMENT



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## SYSTEM ACCEPTANCE DEMONSTRATION PROCEDURE

#### **5                   ACCEPTANCE DEMONSTRATION ITEM**

## 5. Pressure Sensor Check.

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5 a. Set-up the pressure standard at the same elevation as the 5

pressure sensors and allow 10 minutes warm-up.

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5 b. At the OID, record the pressure readings on the current 5

5 data page for the appropriate ACU sensors in the table 5

provided in the System Acceptance Demonstration Document.

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5 C. Verify that the QID readings recorded above agree with 5

the pressure standard to within  $\pm .03$  inches of mercury.

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\*\*\* NOTE \*\*\*

AT VARIOUS LOCATIONS, STEP NUMBER 6

WILL REQUIRE ACCESS TO THE TOWER.

6. Check all peripherals for proper operation as described below. At Class I locations, use ESI provided laptop and disregard references to audible alarm and OND.

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5 a. At the OID, Sign-on as observer. Verify that the initials 5  
5 were printed. Edit the sky to E1 OVC which will cause 5  
5 the system to generate a special observation (provided 5  
5 that the automated sky report is above 1000 feet prior 5  
5 to editing). When the special is generated, verify that 5  
5 the audible alarm and observer notification device are 5  
5 activated. When this check is complete, reset the sky 5  
5 report to automatic, which will most likely cause 5  
5 another special. Cancel the special and SIGN-OFF. 5

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b. For towered locations, in the tower, sign on as the Air Traffic Controller. Use the COMMAND VOICE function to verify that the handset is functioning properly by recording a short message. Edit the present weather and add "T" (Thunderstorm) to cause a special and enter "TEST" in remarks. Exit the EDIT function. Ensure that the alarm is activated. Once verified, remove "T" by resetting within EDIT and remove the remark "TEST". Sign off.

5       c. Check telephone lines to determine if voice communication 5  
5           is functioning. Verify voice output by dialing all lines 5  
5           at the AGU. 5





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## 5 SYSTEM ACCEPTANCE DEMONSTRATION PROCEDURE

**5                   ACCEPTANCE DEMONSTRATION ITEM**

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5 GAINING ACCESS TO THE ELECTRONICS WILL EXPOSE  
5 DEADLY VOLTAGES. CARE MUST BE EXERCISED WHEN  
5 WORKING AROUND ENERGIZED EQUIPMENT.

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**\*\*\* CAUTION \*\*\***

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IN ALL MAINTENANCE OPERATIONS, PREVENT DUST, PRECIPITATION, ETC..., FROM COLLECTING ON THE LENSES AND ELECTRONICS! USE TEMPORARY COVERS FOR THE LENSES IF NECESSARY. AVOID TOUCHING THE LENSES WITH BARE HANDS.

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10. At the LEDWI (Present Weather Sensor), open the electronics enclosure and Faraday Box cover.

  - a. Record the current date and time on summary sheet.
  - b. At the DCP, turn the LEDWI power circuit breaker to the [OFF] position.
  - c. At the LEDWI, remove the transmit logic card from the cage and install the LEDWI calibration card STI 200.
  - d. At the DCP, turn the LEDWI circuit breaker to the [ON] position.
  - e. After 8 minutes, turn the LEDWI circuit breaker to the [OFF] position.
  - f. Remove the STI 200 calibration card and install the transmit logic card.
  - g. At the DCP, return the LEDWI circuit breaker to the [ON] position.
  - h. At the LEDWI, close and secure the electronics enclosure door.

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\* RESULTS WILL BE VERIFIED ON \*  
\* RETURN TO THE ACU/OID LOCATION \*  
\* THE OID SHALL DISPLAY ON 12 HR. \*  
\* SCREEN "S+" DURING THE TESTING \*





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5           i. Reconnect the Ceilometer modem cable and secure the DCP  
5           doors.

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## 5 13. At the Visibility Sensor

- a. Visually verify transmitter head is flashing.
- b. Record the current date and time on summary document.
- c. Attach visibility scatter plate to the sensor pole.
- d. Cover the Day/Night sensor lens.
- e. At the DCP, cycle the Visibility circuit breaker off for 5 seconds, then on.
- f. After 5 minutes, remove the Day/Night cover and visibility scatter plate.
- g. At the DCP, cycle the Visibility circuit breaker off for 5 seconds, then on.

\* RESULTS WILL BE VERIFIED AT THE \*  
\* ACU/OID LOCATION. THE OID SHALL \*  
\* DISPLAY ON 12 HR. SCREEN "170"±15\*  
\* AS THE VALUE OF EXTINCTION COE- \*  
\* FFICIENT AND "N" FOR NIGHT DURING\*  
\* THE TEST PERIOD. \*

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**5 14. At the Wind Sensor Mounting Pole Electronics Box.**

- a. Check for correct height above ground. (See Site Table for other than standard height)
- b. Tilt sensor pole over and support in horizontal position using ESI stand. Check that tower tilts properly and that mechanical parts operate smoothly.... No binding.
- c. Verify that both the speed cups and direction vane move freely. Using a lensatic compass, verify sensor orientation ( $\pm 5^\circ$ ). (Alignment procedure may change in the near future)

5 d. Record the current date and time on summary sheet.

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## **ASOS DEMONSTRATION SUMMARY DOCUMENT - EXAMPLE**



# **ASOS DEMONSTRATION SUMMARY DOCUMENT**

4447

W/OSO321:BGMcCormick:rhz:1/23/92  
disk EHB 6,7,10,11,12,13 "attach.tip"

## WP5.1 Speller